# **Wyoming Game & Fish Department**

# ANNUAL BLACK BEAR MORTALITY SUMMARY

# **Harvest Year - 2012**



Prepared by Dan Bjornlie LARGE CARNIVORE MANAGEMENT SECTION Wyoming Game & Fish Department

**June 2013** 

## TABLE OF CONTENTS

TABLE OF CONTENTS	ii
LIST OF TABLES	iii
LIST OF FIGURES	iii
LIST OF APPENDICES	iv
INTRODUCTION	1
MORTALITY ANALYSIS	2
Statewide 2012 Harvest	2
Jackson BMU (101)	7
Grey's River BMU (102)	11
Absaroka BMU (201)	15
Bighorns BMU (301)	19
Sierra Madres BMU (401)	23
Uinta BMU (402)	27
Laramie Peak BMU (501)	28
Snowy Range BMU (502)	32
Wind River BMU (601)	36
Statewide Hunt Area 35 (999)	40

## LIST OF TABLES AND FIGURES

<u>Tab</u>	<u>ole</u>	<u>Page</u>
1.	Annual female black bear harvest, female harvest limits and percent of harvest limit	
	filled, by BMU, 2008-12	6
2.	Harvest criteria for Jackson BMU legal black bear harvest	8
3.	Harvest criteria for Grey's River BMU legal black bear harvest	12
4.	Harvest criteria for Absaroka BMU legal black bear harvest	16
5.	Harvest criteria for Bighorns BMU legal black bear harvest	20
6.	Harvest criteria for the Sierra Madres BMU legal black bear harvest	24
7.	Harvest criteria for the Laramie Peak BMU legal black bear harvest	29
8.	Harvest criteria for the Snowy Range BMU legal black bear harvest	33
9.	Harvest criteria for the Wind River BMU legal black bear harvest	37
Fig	<u>ure</u>	<u>Page</u>
1.	Wyoming BMUs and hunt areas	3
2.	Annual statewide black bear mortalities (all causes) by sex, 2008-12	4
3.	Annual statewide black bear mortalities (all causes) by season, 2008-12	4
4.	Annual statewide non-harvest black bear mortalities by year, 2008-12	5
5.	Number of black bear mortalities of all causes in Jackson BMU by sex, 2008-12	8
6.	Legal harvest of black bears in Jackson BMU, 1994-2012.	9
7.	Percent adult males in the total legal black bear harvest in Jackson BMU, 1994-2012	9
8.	Percent females of the total legal black bear harvest in Jackson BMU, 1994-2012	10
9.	Percent adult females of the total female legal harvest in Jackson BMU, 1994-2012	10
10.	Number of black bear mortalities of all causes in Grey's River BMU by sex, 2008-12	12
11.	Legal harvest of black bears in Greys River BMU, 1994-2012	13
12.	Percent adult males in the total legal black bear harvest in Greys River BMU, 1994-2012	13
13.	Percent females of the total legal black bear harvest in Greys River BMU, 1994-2012	14
14.	Percent adult females of the total female legal harvest in Greys River BMU, 1994-2012	14
15.	Number of black bear mortalities of all causes in Absaroka BMU by sex, 2008-12	16
16.	Legal harvest of black bears in Absaroka BMU, 1994-2012	17
	Percent adult males in the total legal black bear harvest in Absaroka BMU, 1994-2012	

18.	Percent females of the total legal black bear harvest in Absaroka BMU, 1994-2012	18
19.	Percent adult females of the total female legal harvest in Absaroka BMU, 1994-2012	18
20.	Number of black bear mortalities of all causes in Bighorns BMU by sex, 2008-12	20
21.	Legal harvest of black bears in Bighorn BMU, 1994-2012	21
22.	Percent adult males in the total legal black bear harvest in Bighorn BMU, 1994-2012	21
23.	Percent females of the total legal black bear harvest in Bighorn BMU, 1994-2012	22
24.	Percent adult females of the total female legal harvest in Bighorn BMU, 1994-2012	22
25.	Number of black bear mortalities of all causes in Sierra Madres BMU by sex, 2008-12	24
26.	Legal harvest of black bears in Sierra Madres BMU, 1994-2012	25
27.	Percent adult males in the total legal black bear harvest in Sierra Madres BMU, 1994-2012	25
28.	Percent females of the total legal black bear harvest in Sierra Madres BMU, 1994-2012	26
29.	Percent adult females of the total female legal harvest in Sierra Madres BMU, 1994-2012	26
30.	Number of black bear mortalities of all causes in Laramie Peak BMU by sex, 2008-12	29
31.	Legal harvest of black bears in Laramie Peak BMU, 1994-2012	30
32.	Percent adult males in the total legal black bear harvest in Laramie Peak BMU, 1994-2012	30
33.	Percent females of the total legal black bear harvest in Laramie Peak BMU, 1994-2012	31
34.	Percent adult females of the total female legal harvest in Laramie Peak BMU, 1994-2012	31
35.	Number of black bear mortalities of all causes in Snowy Range BMU by sex, 2008-12	33
36.	Legal harvest of black bears in Snowy Range BMU, 1994-2012	34
	Percent adult males in the total legal black bear harvest in Snowy Range BMU, 1994-2012	
38.	Percent females of the total legal black bear harvest in Snowy Range BMU, 1994-2012	35
39.	Percent adult females of the total female legal harvest in Snowy Range BMU, 1994-2012	35
40.	Number of black bear mortalities of all causes in Wind River BMU by sex, 2008-12	37
41.	Legal harvest of black bears in Wind River BMU, 1994-2012	38
42.	Percent adult males in the total legal black bear harvest in Wind River BMU, 1994-2012	38
43.	Percent females of the total legal black bear harvest in Wind River BMU, 1994-2012	39
44.	Percent adult females of the total female legal harvest in Wind River BMU, 1994-2012	39
<u>Арг</u>	<u>pendices</u>	<u>Page</u>
I.	Wyoming black bear hunting season dates and seasonal female harvest limits by BMU and hunt area, 2012	41
17		
11.	Black bear season closure dates for spring and fall seasons, 2010-12	42

#### **INTRODUCTION**

This document contains a summary of Wyoming's black bear mortalities for 2008 through 2012. Mortalities are categorized by cause, including legal and illegal harvest, damage removals, road-kills, and other miscellaneous causes of death (i.e., natural mortalities). Throughout this document the term "total mortalities" refers to a combination of all causes of death while the term "harvest", when not prefaced by "legal" or "illegal," refers to legal and illegal kills combined.

Since 1994, the Wyoming Game and Fish Department (WGFD) have used a female harvest limit system to regulate black bear harvest. Harvest limits and hunting seasons are assigned to either individual or grouped hunt areas (Appendix I). Bear Management Unit (BMU) or hunt area harvest levels are monitored and regulated by requiring all successful black bear hunters to present the skull and pelt of their harvested bear to WGFD personnel within 72 hours of taking the animal. Harvested female bears are counted against the female harvest limit for the BMU or hunt area in which they were killed. Upon meeting its seasonal female harvest limit, a BMU or hunt area is closed to harvest for the remainder of that season. To more effectively distribute hunting pressure and allocate harvest opportunities among spring and fall seasons, female harvest limits are split into spring and fall components. Harvest in excess of a BMU/hunt area's spring harvest limit is subtracted from the fall harvest limit for the same BMU/hunt area. Conversely, the remainder of unfilled spring harvest limits is transferred to their associated fall harvest limit. An up-to-date, running tally of harvested female black bears and BMU/hunt area closures is kept by WGFD and made available to hunters via a telephone hotline and Department website.

WGFD reviews Wyoming's black bear harvest and other causes of black bear mortality annually. Mortality statistics are compiled in an annual mortality report and compared to past trends and established management criteria. Currently, hunting seasons and harvest limits are set for 3-year periods to better determine effects of the harvest limit on the black bear population in that area. At the end of the 3-year period, adjustments may be made to more effectively manage local bear populations. Through this process, many changes have been made to WGFD's black bear management system. BMU/hunt area boundaries have been revised and new hunt areas have been created. Additionally, many changes have been made to hunting season opening and closing dates and total season length.

Mortality data for years prior to 2012 may vary from previous reports. These differences reflect mortalities reported too late to be included in the previous annual report. The figures in this document supersede those presented in previously published annual mortality reports.

#### **BLACK BEAR MORTALITY ANALYSIS**

## 2012 Statewide Mortality

Harvest year 2012 is the second year of the current 3-year hunting cycle. Many of the harvest limits were increased for this cycle (Table 1). Another notable change was creation of a new statewide hunt area (area 35) to include all regions of the state that were previously not within a BMU or hunt area. In addition, the size of two hunt areas (areas 10 and 19) were enlarged to include adjacent areas inhabited by black bears (Figure 1).

A lower spring snowpack resulted in higher spring harvest than documented in the past 5 years (Figure 3). As a result, 5 quotas were met in the spring and 5 in the fall, an increase from 2011 (Appendix II).

Total black bear mortality in 2012 was 436 (Figure 2). These mortalities included 391 legally harvested bears (90%), 1 illegal kill (<1%), 33 damage removals (8%), 7 road-kills (2%), and 4 miscellaneous mortalities (1%). Total mortality increased 3% from the 2011 total of 422, and was 6% higher than the 2008-11 average total mortality of 413. Damage removal mortalities increased from 17 bears in 2011 to 33 in 2012 (Figure 4). Twenty-six of the 33 (79%) damage mortalities were males.

Due to geographic separation of black bear populations, variations in habitat quality and bear density, and an uneven distribution of hunting pressure, caution is warranted when interpreting statewide harvest statistics. Therefore, more specific harvest criteria are presented by BMU in each of the following sections of this report. In BMUs with low harvest, interpreting harvest statistics based on subsets of sexes, age classes, or seasons can result in extremely variable results that are difficult to interpret due to small sample sizes of each cohort. For this reason, 3-year running averages are used in the harvest criteria.

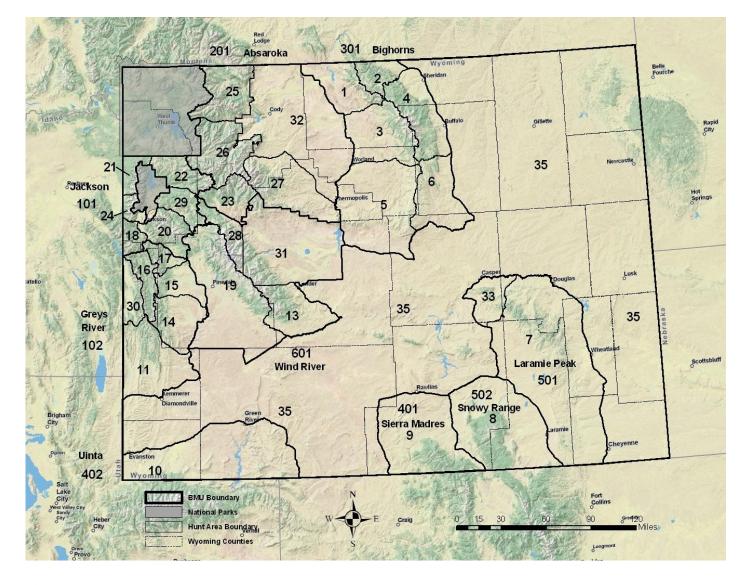
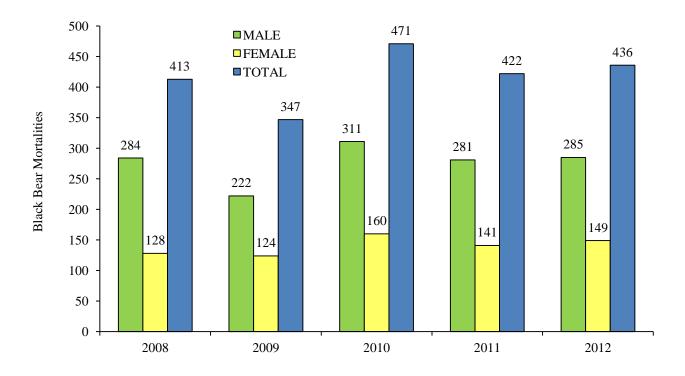


Figure 1. Wyoming BMUs and hunt areas.



**Figure 2**. Annual statewide black bear mortalities (all causes) by sex, 2008-12. There was 1 mortality of unknown sex in 2008 and 2009 and 2 in 2012.

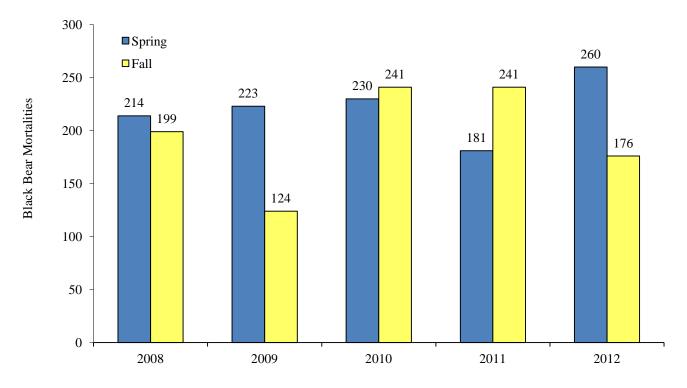


Figure 3. Annual statewide black bear mortalities (all causes) by season, 2008-12.

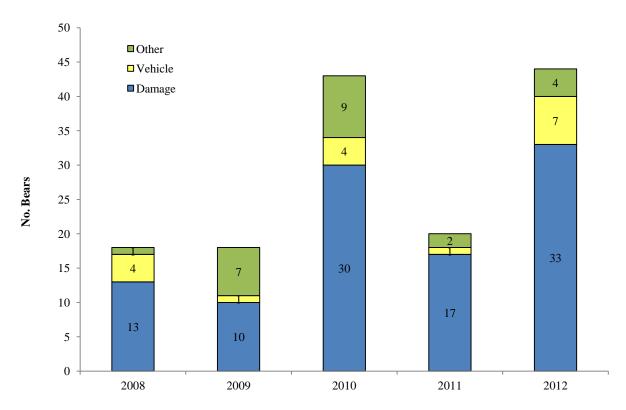


Figure 4. Annual statewide non-harvest black bear mortalities by year, 2008-12.

**Table 1**. Annual female black bear harvest (legal/illegal harvest), female harvest limits, and percent of annual harvest limit filled, by BMU, 2008-12.

	2008	3		2009	)		2010	)		2011	_		2012	2	
Bear Management Unit	Female harvest	Harvest limit	% of harvest limit	Female harvest	Harvest limit	% of harvest limit	Female harvest	Harvest limit	% of harvest limit	Female harvest	Harvest limit	% of harvest limit	Female harvest	Harvest limit	% of harvest limit
Jackson (101)	25	25	100	19	25	76	27	25	108	23	33	70	22	33	67
Grey's River (102) areas 14, 15, 16, 17, 30	25	32	78	30	32	94	32	32	100	34	36	94	37	36	103
Grey's River (102) area 11	3	8	38	5	8	63	8	8	100	3	10	30	5	10	50
Absaroka (201) areas 23,25,26,27	13	18	72	7	18	39	16	18	89	13	18	72	6	18	33
Absaroka (201) area 32	1	5	20	4	5	80	0	5	0	0	NA	NA	1	NA	NA
Bighorns (301) areas 1, 2	9	9	100	11	9	122	10	9	111	12	12	100	13	12	108
Bighorns (301) areas 3, 4	6	6	100	7	6	117	6	6	100	10	10	100	8	10	80
Bighorns (301) areas 5, 6	3	4	75	1	4	25	2	4	50	0	4	0	1	4	25
Sierra Madre (401)	7	7	100	8	7	114	8	7	114	12	14	88	14	14	100
Uintas (402)	0	2	0	0	2	0	1	2	50	0	4	0	3	4	75
Laramie Peak (501) area 7	5	6	83	6	6	100	4	6	67	3	6	50	8	6	133
Laramie Peak (501) area 33 <sup>b</sup>	4	4	100	1	4	25	4	4	100	4	6	67	3	6	50
Snowy Range (502)	8	8	100	9	8	113	8	8	100	6	7	86	7	7	100
Wind River (601) area 13	5	5	100	6	5	120	5	5	100	8	8	100	6	8	75
Wind River (601) area 19	7	12	58	4	12	33	12	12	100	7	18	39	6	18	33
Wind River (601) area 28	2	6	33	1	6	17	6	6	100	0	8	0	0	8	0
Wind River (601) area 31	0	4	0	0	4	0	0	4	0	0	4	0	0	4	0
Statewide (999) area 35	*	*	*	*	*	*	*	*	*	0	NA	NA	0	NA	NA
Statewide	123	161	77	119	161	74	149	161	93	135	198	68	140	198	71

#### **JACKSON BEAR MANAGEMENT UNIT (101)**

#### **2012 Black Bear Mortality**

Harvest in 2012 for BMU 101 decreased for the second year in a row despite an increase in the harvest limit in 2010. Unlike 2011 where most harvest occurred in the fall due to heavy late-spring snowpack, just over half (53%) of annual harvest occurred in the fall. Female harvest in BMU 101 has been stable since 2000, with most fluctuation due to variation in male harvest (Figure 6). The percent of adult males and females in the total harvest were within the 'stable' range in 2012, with adult males trending slightly into the 'population increase' range. The percent of adults in the female harvest remained in the 'reduction' range in 2012, but due to the significant amount of refuge habitat surrounding this BMU and the prohibition of baiting in a majority of the unit, it is likely this criterion reflects the abundance of olderage females and not a deficit of males and subadult females. The percent adult male and female harvest criteria provided evidence for this. While areas 20 and 29 accounted for much of the harvest and may be experiencing more hunting pressure and effects of harvest, overall, the pattern of mortalities and harvest criteria indicated that the black bear population in BMU 101 experienced light to moderate harvest and was relatively stable (Table 3 and Figures 6-9).

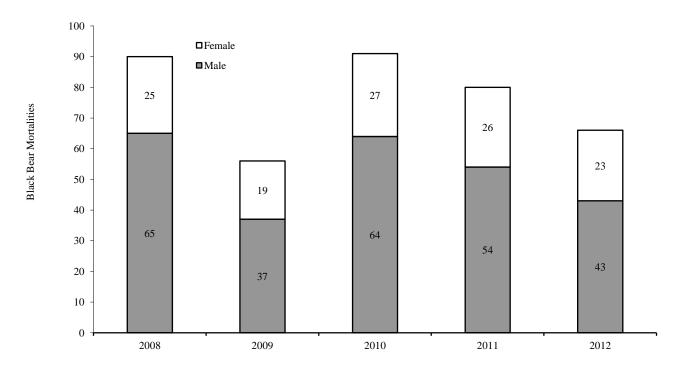


Figure 5. Number of black bear mortalities of all causes in Jackson BMU by sex, 2008-12.

**Table 2.** Harvest criteria for Jackson BMU legal black bear harvest. Criteria are presented by objective as percent adult male in the total harvest, percent female in the total harvest, and percent adult female in the female harvest. Data represent 3-year running average values of current year and previous 2 years.

		Harvest Criteria		
Year	Objective	% Adult <sup>a</sup> Males in Total Harvest	% Females in Total Harvest	% Adult <sup>a</sup> Females in Female Harvest
	Population Reduction	< 25%	> 40%	> 55%
	Stable Population	25 – 35%	30 – 40%	45 – 55%
	Population Increase	> 35%	< 30%	< 45%
2008		28.5	37.8	53.0
2009		28.5	34.7	53.2
2010		33.4	31.1	62.4
2011		35.5	32.1	61.6
2012		35.8	33.4	71.4

<sup>&</sup>lt;sup>a</sup> Adults classified as males and females ≥ 5 years of age based on tooth cementum annuli.

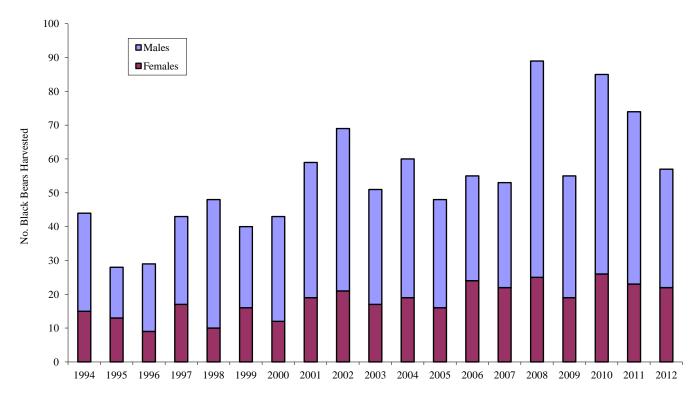


Figure 6. Legal harvest of black bears in Jackson BMU, 1994-2012.

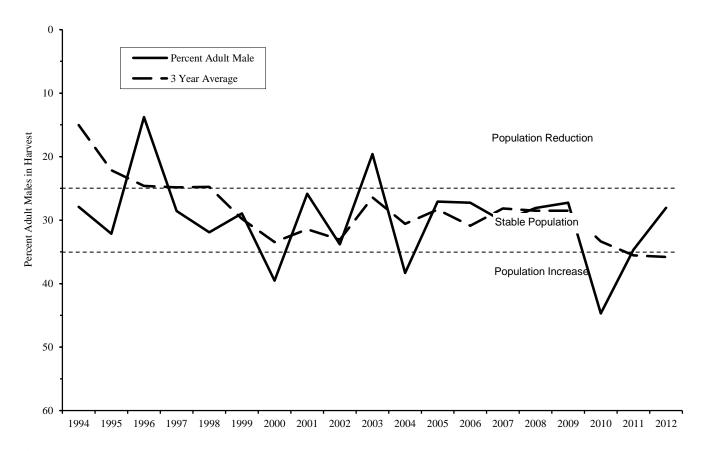


Figure 7. Percent adult males in the total legal black bear harvest in Jackson BMU, 1994-2012.

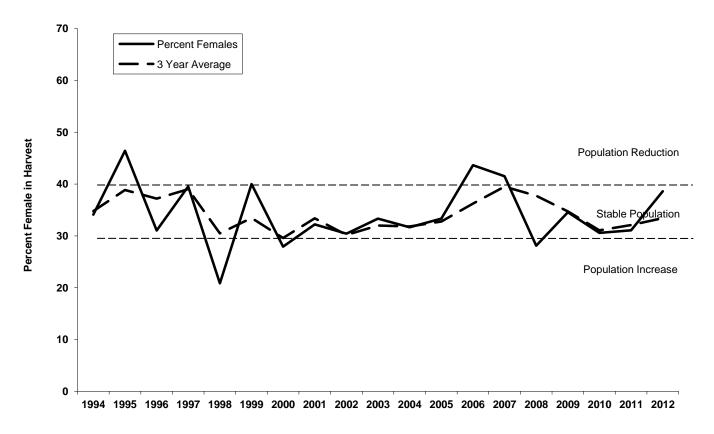


Figure 8. Percent females of the total legal black bear harvest in Jackson BMU, 1994-2012.

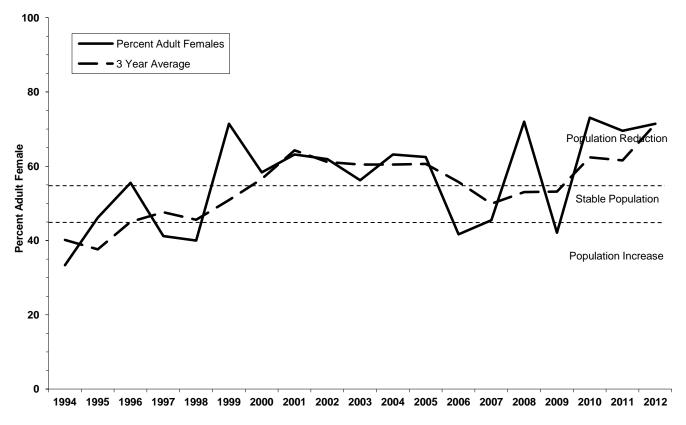


Figure 9. Percent adult females of the total female legal harvest in Jackson BMU, 1994-2012.

## **GREY'S RIVER BEAR MANAGEMENT UNIT (102)**

## **2012 Black Bear Mortality**

Harvest in BMU 102 decreased slightly in 2012 for the second year in a row, but was higher than all years prior to 2010 (Figure 11). Harvest criteria continue to indicate impacts to the male cohort of the black bear population and the percent females in the harvest trending into the 'reduction' range for the second consecutive year (Figures 12 and 13). However, the percent of adults in the female harvest has fluctuated around the 'stable/increase' range (Figure 14), indicating there are still subadult females available for harvest. Continuation of the current limits through 2013 will provide more information on whether this level of harvest will maintain the current trend toward 'reduction'.

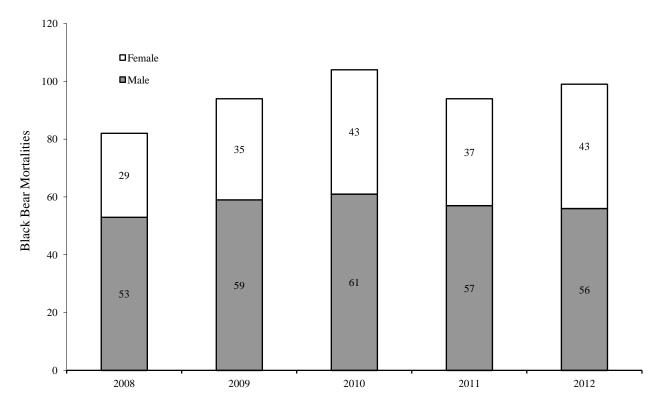


Figure 10. Number of black bear mortalities of all causes in Grey's River BMU by sex, 2008-12.

**Table 3.** Harvest criteria for Grey's River BMU legal black bear harvest. Criteria are presented by objective as percent adult male in the total harvest, percent female in the total harvest, and percent adult female in the female harvest. Data represent 3-year running average values of current year and previous 2 years.

		Harvest Criteria		
Year	Objective	% Adult <sup>a</sup> Males in Total Harvest	% Females in Total Harvest	% Adult <sup>a</sup> Females in Female Harvest
	Population Reduction	< 25%	> 40%	> 55%
	Stable Population	25 – 35%	30 – 40%	45 – 55%
	Population Increase	> 35%	< 30%	< 45%
2008		18.5	36.7	32.0
2009		19.5	38.9	39.8
2010		19.9	38.2	49.5
2011		17.7	39.6	44.4
2012		14.8	41.6	37.1

<sup>&</sup>lt;sup>a</sup> Adults classified as males and females ≥ 5 years of age based on tooth cementum annuli.

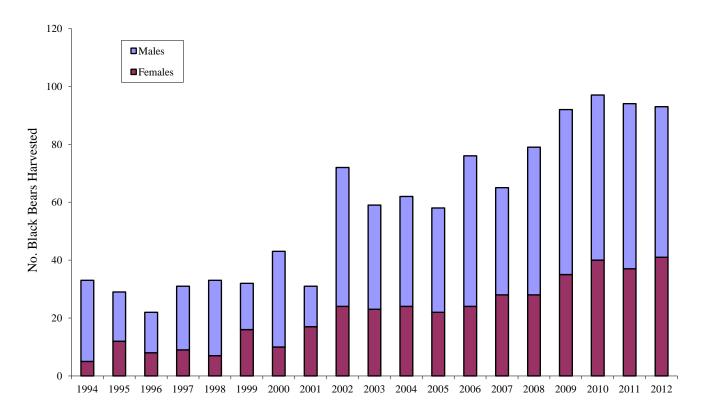


Figure 11. Legal harvest of black bears in Greys River BMU, 1994-2012.

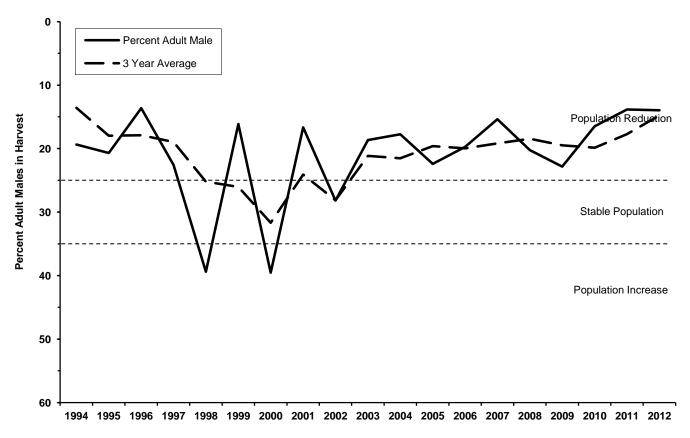


Figure 12. Percent adult males in the total legal black bear harvest in Greys River BMU, 1994-2012.

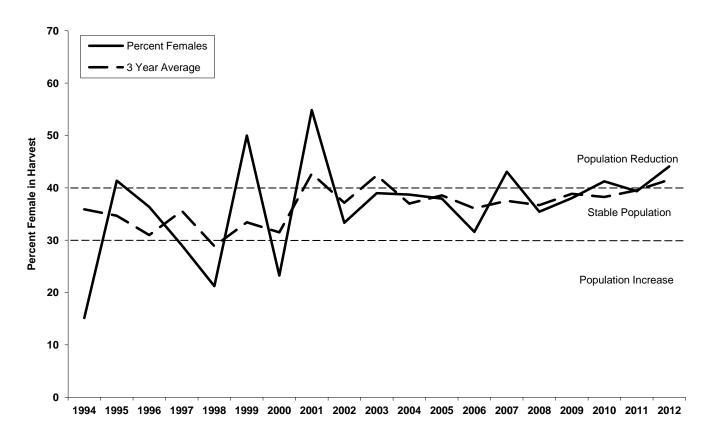


Figure 13. Percent females of the total legal black bear harvest in Greys River BMU, 1994-2012.

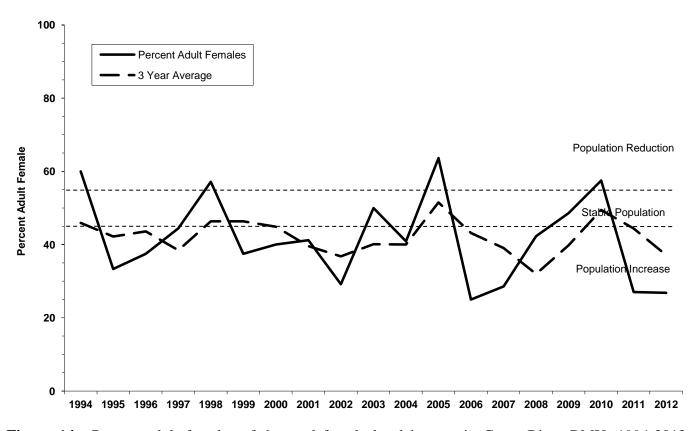


Figure 14. Percent adult females of the total female legal harvest in Greys River BMU, 1994-2012.

#### ABSAROKA BEAR MANAGEMENT UNIT (201)

#### **2012 Black Bear Mortality**

Overall, 2012 mortalities and harvest decreased significantly for the second consecutive year. A continued high percentage of adult males in the harvest and the moderate proportion of females in the harvest indicate a healthy and stable black bear population experiencing moderate to low harvest pressure in BMU 201 (Table 5 and Figures 16-19). As with BMU 101, the percentage of adults in the female harvest is in the 'reduction' range. However, the significant amount of refuge habitat surrounding this BMU and the prohibition of baiting in a majority of it suggest it is likely that this criterion reflects the abundance of older age females and not a deficit of males and subadult females. Although males are still more vulnerable to harvest of all methods, the prohibition of baiting and reliance on "spot and stalk" hunting and incidental take reduces hunter selectivity and allows take of females in proportion to their availability in the population. In addition, the close proximity of Yellowstone National Park and large tracts of remote wilderness provide a source population and refuge for black bears in the Absaroka BMU.

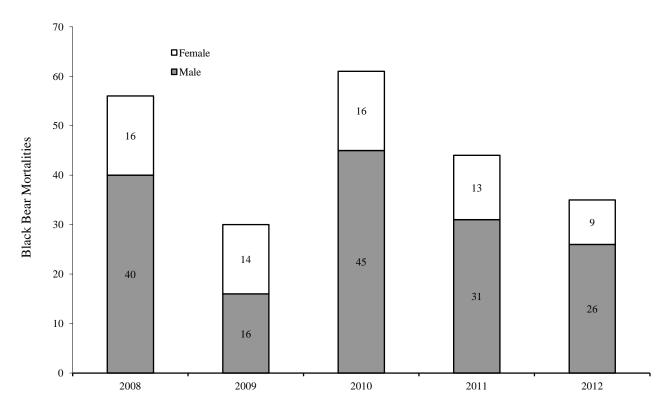


Figure 15. Number of black bear mortalities of all causes in Absaroka BMU by sex, 2008-12.

**Table 4.** Harvest criteria for Absaroka BMU legal black bear harvest. Criteria are presented by objective as percent adult male in the total harvest, percent female in the total harvest, and percent adult female in the female harvest. Data represent 3-year running average values of current year and previous 2 years.

		Harvest Criteria	Harvest Criteria						
Year	Objective	% Adult <sup>a</sup> Males in Total Harvest	% Females in Total Harvest	% Adult <sup>a</sup> Females in Female Harvest					
	Population Reduction	< 25%	> 40%	> 55%					
	Stable Population	25 – 35%	30 – 40%	45 – 55%					
	Population Increase	> 35%	< 30%	< 45%					
2008		40.7	33.7	60.2					
2009		43.7	35.1	54.5					
2010		40.6	31.7	53.3					
2011		37.8	33.3	54.9					
2012		37.7	27.0	56.4					

<sup>&</sup>lt;sup>a</sup> Adults classified as males and females  $\geq 5$  years of age based on tooth cementum annuli.

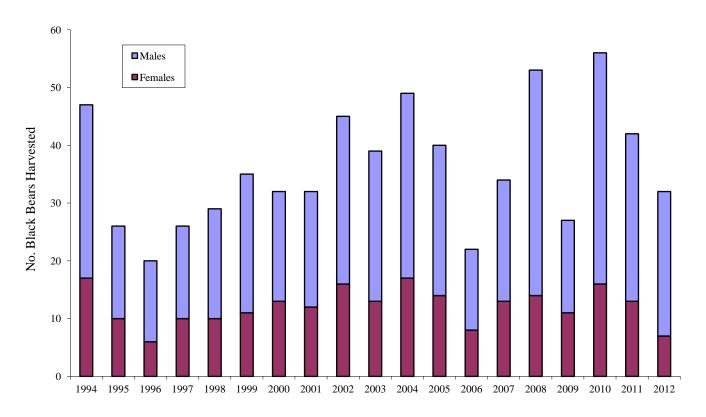


Figure 16. Legal harvest of black bears in Absaroka BMU, 1994-2012.

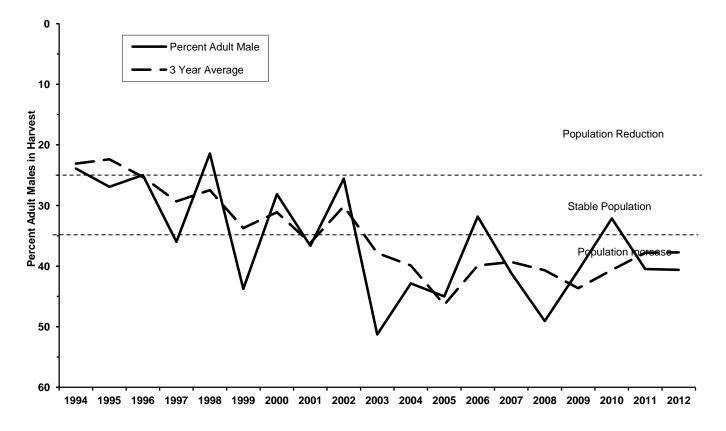


Figure 17. Percent adult males in the total legal black bear harvest in Absaroka BMU, 1994-2012.

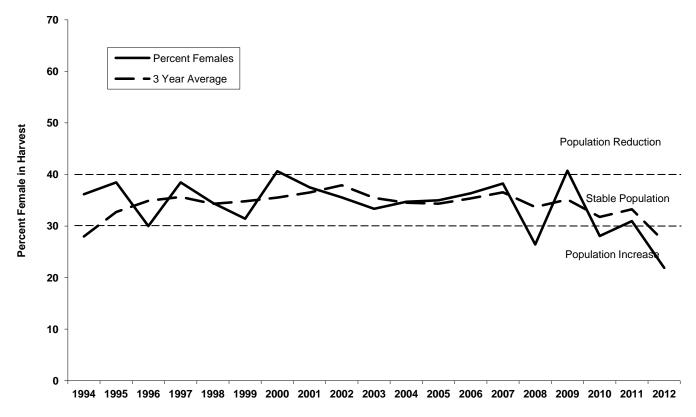


Figure 18. Percent females of the total legal black bear harvest in Absaroka BMU, 1994-2012.

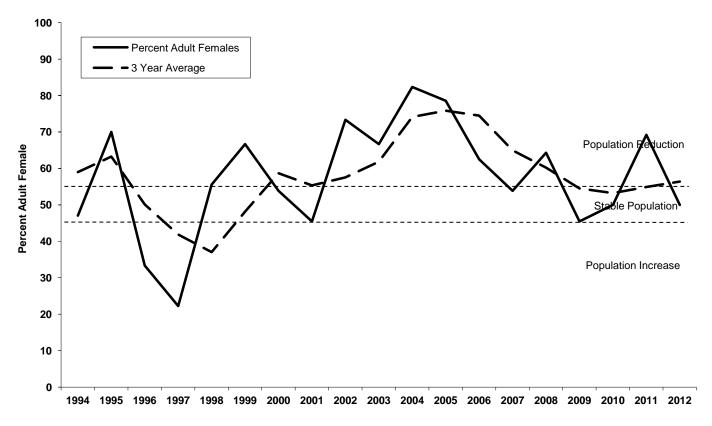


Figure 19. Percent adult females of the total female legal harvest in Absaroka BMU, 1994-2012.

## **BIGHORNS BEAR MANAGEMENT UNIT (301)**

#### **2012 Black Bear Mortality**

There was a 40% increase in legal harvest in BMU 301 in 2012. The total of 89 mortalities and 80 legally harvested bears was the highest recorded for this BMU since records have been kept. The proportion of males in the harvest has been in the 'population reduction' zone since the mid-1990's (Figure 22). While the percentage of females in the harvest was in the population 'reduction' zone (Figure 23) from 2007-09, it has fallen into the 'stable' range since 2010. The proportion of adults in the female harvest has increased into the 'stable' range from 'increase' in the past few years and may indicate that harvest is beginning to impact the female cohort of the population (Figure 24). Continuation of these harvest limits through 2013 will provide more data with which to assess this trend.

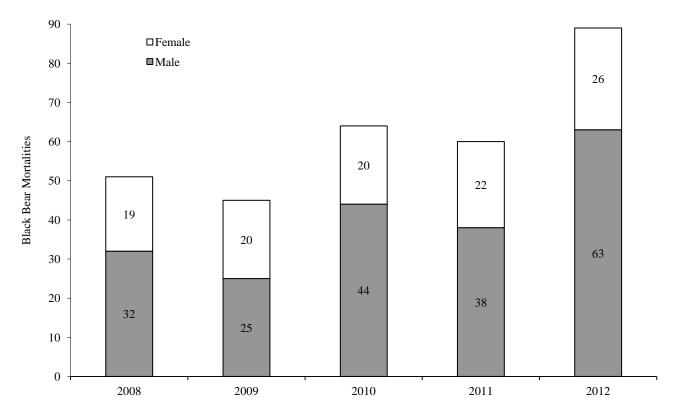


Figure 20. Number of black bear mortalities of all causes in Bighorns BMU by sex, 2008-12.

**Table 5.** Harvest criteria for Bighorns BMU legal black bear harvest. Criteria are presented by objective as percent adult male in the total harvest, percent female in the total harvest, and percent adult female in the female harvest. Data represent 3-year running average values of current year and previous 2 years.

		Harvest Criteria		
Year	Objective	% Adult <sup>a</sup> Males in Total Harvest	% Females in Total Harvest	% Adult <sup>a</sup> Females in Female Harvest
	Population Reduction	< 25%	> 40%	> 55%
	Stable Population	25 – 35%	30 – 40%	45 – 55%
	Population Increase	> 35%	< 30%	< 45%
2008		17.7	45.2	32.4
2009		18.2	44.2	35.3
2010		17.0	39.2	32.6
2011		15.8	39.8	48.2
2012		17.3	32.7	43.3

<sup>&</sup>lt;sup>a</sup> Adults classified as males and females ≥ 5 years of age based on tooth cementum annuli.

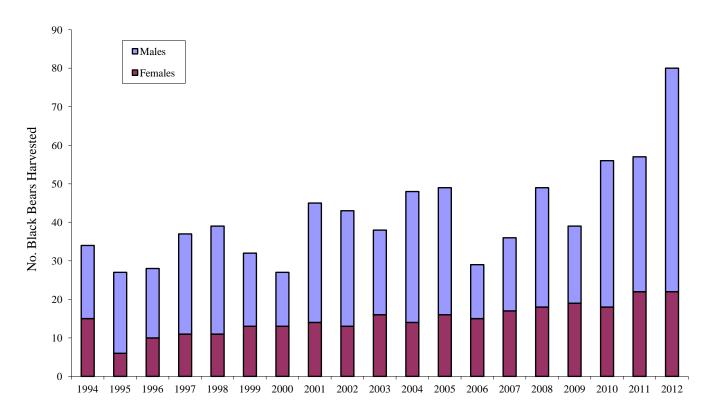


Figure 21. Legal harvest of black bears in Bighorns BMU, 1994-2012.

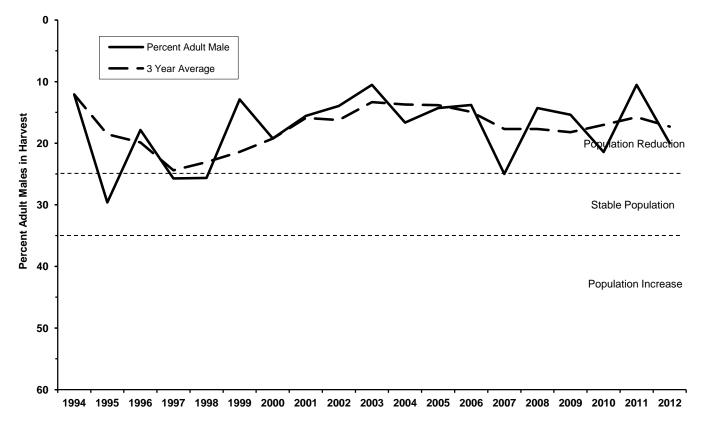


Figure 22. Percent adult males in the total legal black bear harvest in Bighorns BMU, 1994-2012.

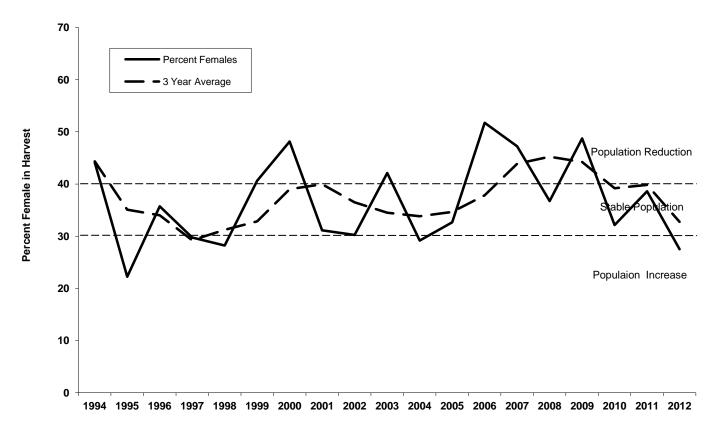


Figure 23. Percent females of the total legal black bear harvest in Bighorns BMU, 1994-2012.

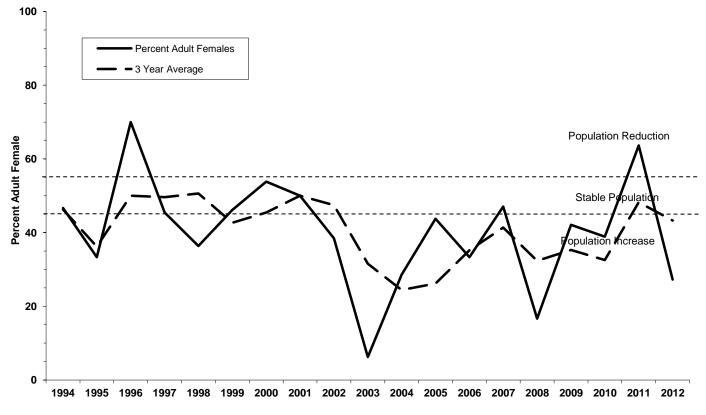


Figure 24. Percent adult females of the total female legal harvest in Bighorns BMU, 1994-2012.

## **SIERRA MADRE BEAR MANAGEMENT UNIT (401)**

### **2012 Black Bear Mortality**

The doubling of the harvest limit for this BMU in 2011 resulted in a significant increase in harvest (Figure 26). In year 2 of the harvest cycle, a pattern is beginning to emerge with adult male harvest (Figure 27). The proportion of adult males in the harvest has moved sharply into the population 'reduction' range since 2011. The percent female criterion remains at the 'stable/increase' boundary (Figure 28), but the percent of adults in the female harvest has fluctuated greatly due to low numbers of females in past harvest (small sample size - Figure 29). If harvest increases continue for the next year of this harvest cycle it will provide more data to compare to the harvest criteria and may reduce fluctuations due to low numbers of specific cohorts.

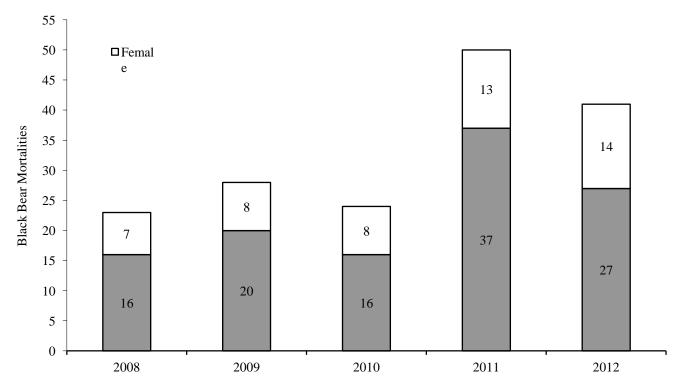


Figure 25. Number of black bear mortalities of all causes in Sierra Madres BMU by sex, 2008-12

**Table 6.** Harvest criteria for Sierra Madre BMU legal black bear harvest. Criteria are presented by objective as percent adult male in the total harvest, percent female in the total harvest, and percent adult female in the female harvest. Data represent 3-year running average values of current year and previous 2 years.

		Harvest Criteria		
Year	Objective	% Adult <sup>a</sup> Males in Total Harvest	% Females in Total Harvest	% Adult <sup>a</sup> Females in Female Harvest
	Population Reduction	< 25%	> 40%	> 55%
	Stable Population	25 – 35%	30 – 40%	45 – 55%
	Population Increase	> 35%	< 30%	< 45%
2008		18.8	27.7	13.3
2009		26.3	26.3	21.0
2010		24.2	31.5	14.3
2011		22.0	30.0	20.3
2012		13.1	31.7	8.6

<sup>&</sup>lt;sup>a</sup> Adults classified as males and females  $\geq$  5 years of age based on tooth cementum annuli.

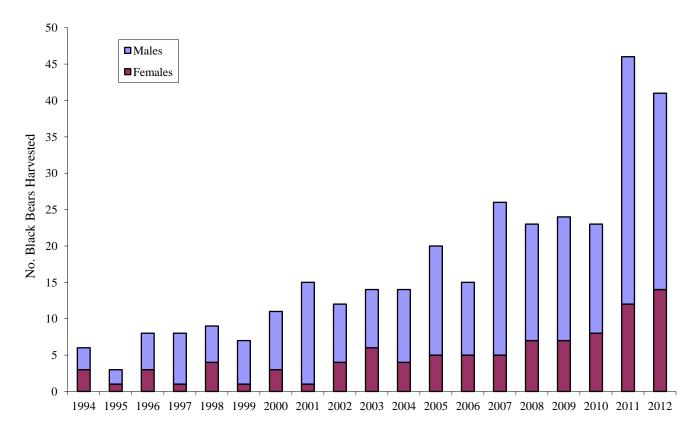


Figure 26. Legal harvest of black bears in Sierra Madres BMU, 1994-2012.



Figure 27. Percent adult males in the total legal black bear harvest in Sierra Madres BMU, 1994-2012.

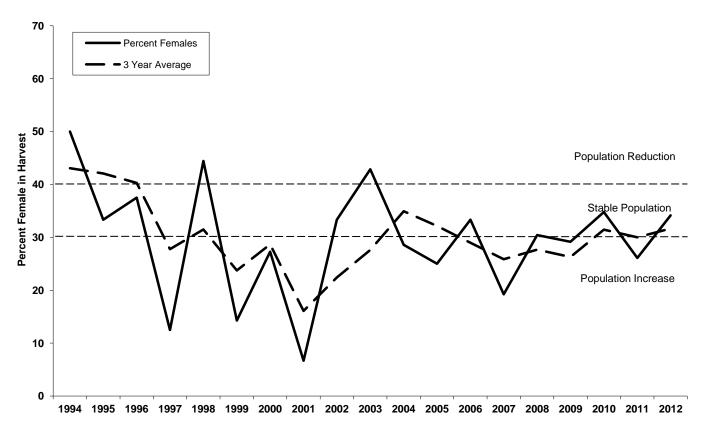


Figure 28. Percent females of the total legal black bear harvest in Sierra Madres BMU, 1994-2012.

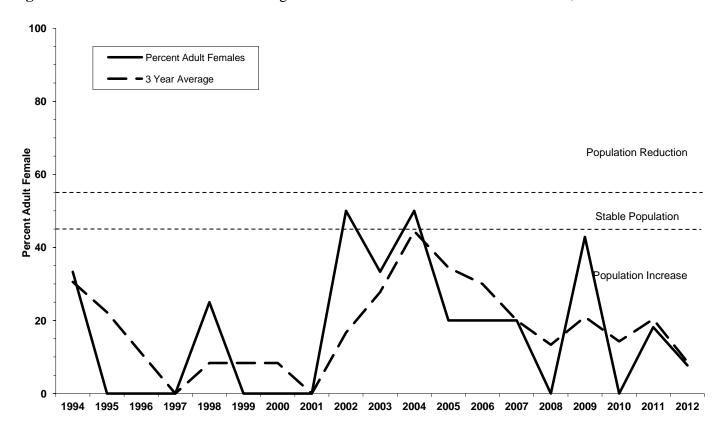


Figure 29. Percent adult females of the total female legal harvest in Sierra Madres BMU, 1994-2012.

## **UINTA BEAR MANAGEMENT UNIT (402)**

## **2012 Black Bear Mortality**

The female harvest limit for BMU 402 was increased to 4 females (2 spring, 2 fall) prior to the 2011 season. In addition, this BMU was enlarged to include all areas south of Interstate 80 and west of Highway 430 from Rock Springs to the Colorado and Utah borders. One male (adult) and three female (2 subadult, 1 adult) black bears were legally harvested in 2012. Three of the 4 bears were taken in the spring season. Small sample sizes confound interpretation of harvest data and their relationship to the harvest criteria for BMU 402.

## LARAMIE PEAK BEAR MANAGEMENT UNIT (501)

### **2012 Black Bear Mortality**

Since 2008, black bear harvest in BMU 501 has increased significantly compared to pre-2008 levels (Figure 31). Harvest criteria are based on percentages of sex/age class cohorts in the harvest and this increase provided more data with which to assess effects of harvest levels on the population. Both the percent of adult males and the percent of females in the harvest have moved into the 'stable' range from 'reduction' through 2011 (Figures 32 and 33). Though still in the 'stable' range, both indices have begun trending upward in 2012. The fluctuation in the percent of adults in the female harvest has also been reduced and centered on the 'stable' range (Figure 34). Another year of the current harvest limits will provide data to more effectively gauge whether this upward trend in harvest effects remains through 2013.

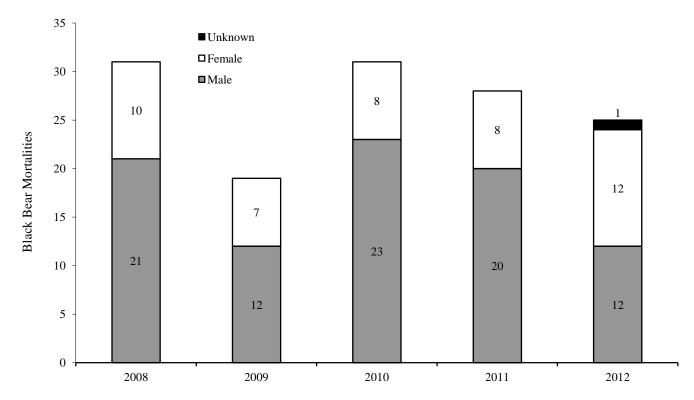


Figure 30. Number of black bear mortalities of all causes in Laramie Peak BMU by sex, 2008-12.

**Table 7.** Harvest criteria for Laramie Peak BMU legal black bear harvest. Criteria are presented by objective as percent adult male in the total harvest, percent female in the total harvest, and percent adult female in the female harvest. Data represent 3-year running average values of current year and previous 2 years.

		Harvest Criteria	Harvest Criteria						
Year	Objective	% Adult <sup>a</sup> Males in Total Harvest	% Females in Total Harvest	% Adult <sup>a</sup> Females in Female Harvest					
	Population Reduction	< 25%	> 40%	> 55%					
	Stable Population	25 – 35%	30 – 40%	45 – 55%					
	Population Increase	> 35%	< 30%	< 45%					
2008		19.1	39.1	41.4					
2009		21.0	38.6	51.9					
2010		28.0	32.2	59.0					
2011		28.4	30.1	50.0					
2012		26.1	35.3	41.3					

<sup>&</sup>lt;sup>a</sup> Adults classified as males and females  $\geq 5$  years of age based on tooth cementum annuli.

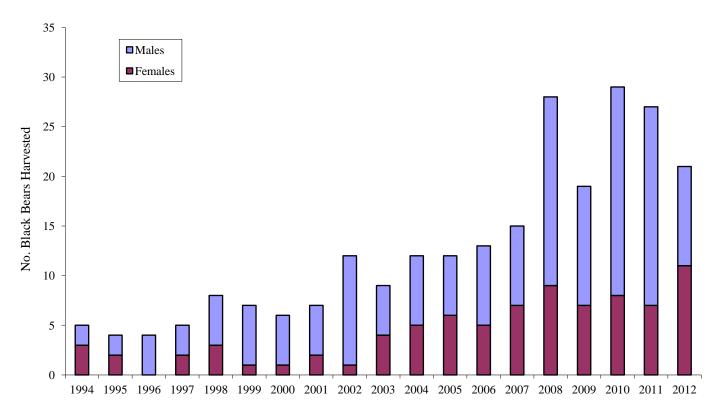


Figure 31. Legal harvest of black bears in Laramie Peak BMU, 1994-2012.

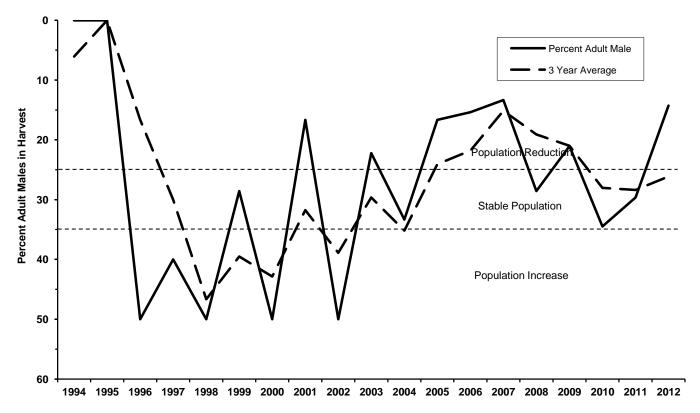


Figure 32. Percent adult males in the total legal black bear harvest in Laramie Peak BMU, 1994-2012.

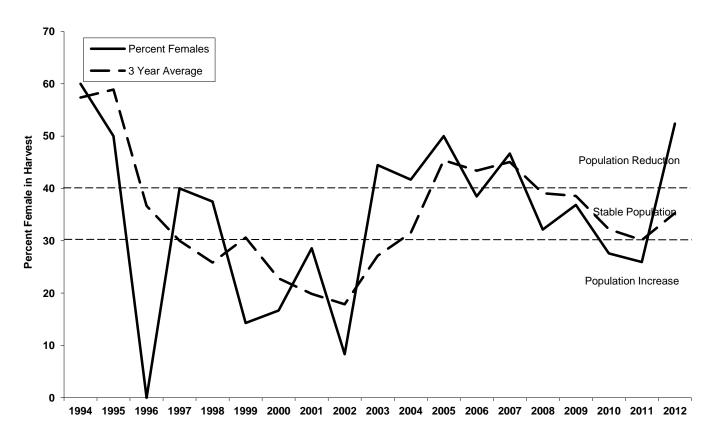


Figure 33. Percent females of the total legal black bear harvest in Laramie Peak BMU, 1994-2012.

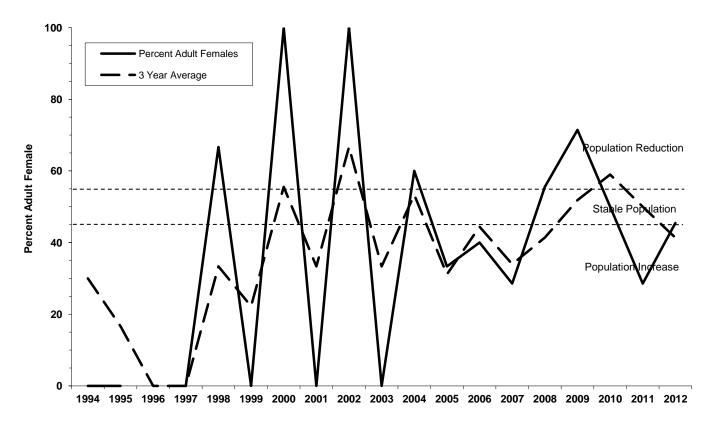


Figure 34. Percent adult females of the total female legal harvest in Laramie Peak BMU, 1994-2012.

## **SNOWY RANGE BEAR MANAGEMENT UNIT (502)**

#### **2012 Black Bear Mortality**

Total mortalities and harvest have been very consistent in this BMU since 2001 (Figure 35 and 36). The harvest criteria continue to show a slight impact to the adult male cohort of the population that was trending downward in 2011 and 2012 (Figure 37). The percent of females in the harvest remained in the 'reduction' range, but continued trending downward toward 'stable' (Figure 38). The percent of adults in the female harvest remained in or near the 'stable' range (Figure 39), but small sample sizes caused major fluctuations in the adult female harvest. Further monitoring of this trend over the remaining year of the current cycle will provide more data on the effects of this level of harvest.

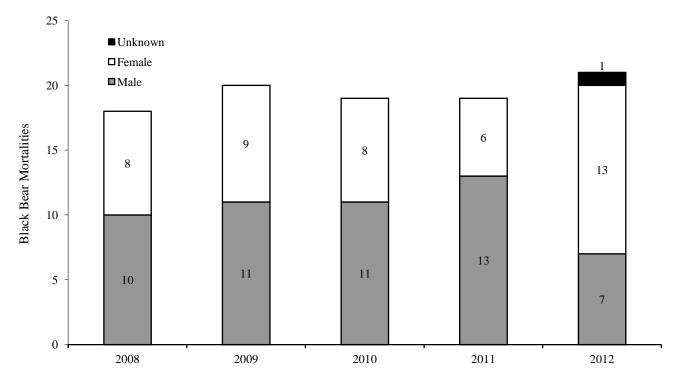


Figure 35. Number of black bear mortalities of all causes in Snowy Range BMU by sex, 2008-12.

**Table 8.** Harvest criteria for Snowy Range BMU legal black bear harvest. Criteria are presented by objective as percent adult male in the total harvest, percent female in the total harvest, and percent adult female in the female harvest. Data represent 3-year running average values of current year and previous 2 years.

		Harvest Criteria		
Year	Objective	% Adult <sup>a</sup> Males in Total Harvest	% Females in Total Harvest	% Adult <sup>a</sup> Females in Female Harvest
	Population Reduction	< 25%	> 40%	> 55%
	Stable Population	25 – 35%	30 – 40%	45 – 55%
	Population Increase	> 35%	< 30%	< 45%
2008		16.9	39.5	40.5
2009		15.6	43.9	50.5
2010		18.8	48.2	51.5
2011		27.2	42.0	45.9
2012		30.2	39.9	40.6

<sup>&</sup>lt;sup>a</sup> Adults classified as males and females ≥ 5 years of age based on tooth cementum annuli.

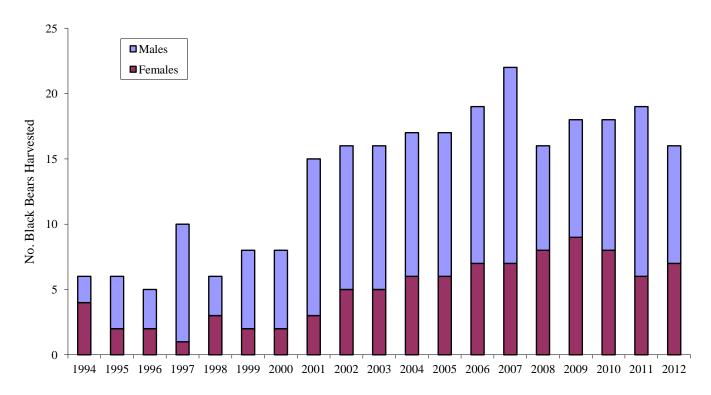


Figure 36. Legal harvest of black bears in Snowy Range BMU, 1994-2012.

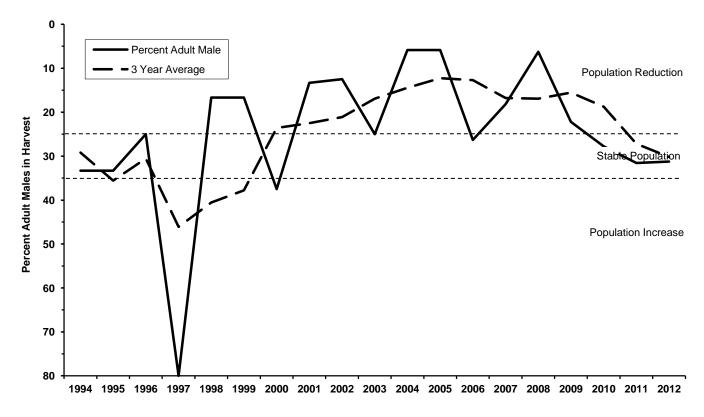


Figure 37. Percent adult males in the total legal black bear harvest in Snowy Range BMU, 1994-2012.

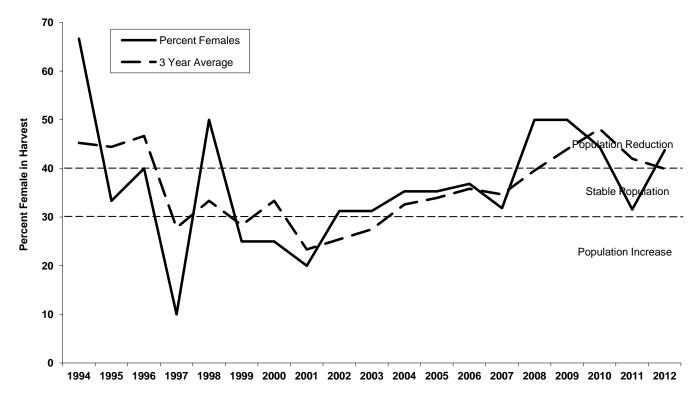


Figure 38. Percent females of the total legal black bear harvest in Snowy Range BMU, 1994-2012.

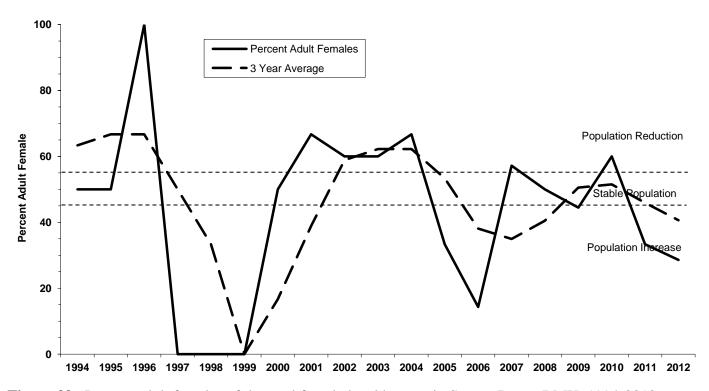


Figure 39. Percent adult females of the total female legal harvest in Snowy Range BMU, 1994-2012.

### WIND RIVER RANGE BEAR MANAGEMENT UNIT (601)

#### **2012 Black Bear Mortality**

Harvest in BMU 601 increased from 2011 (Figure 41) and was near the 5-year average. The harvest trend for BMU 601 shows recent fluctuations in the percentage of adult males in the harvest, with an overall trend toward the 'stable/increase' population range. The percentage of females in the harvest remained relatively steady in the 'stable population' range, while the percentage of adults in the female harvest increased into the 'stable' range in recent years. Limited black bear harvest on the Wind River Reservation may provide adjacent hunt areas with immigrating bears, supplementing the population in this BMU. Taken as a whole, the criteria show a relatively stable black bear population encountering light to moderate harvest (Table 21 and Figures 40-44).

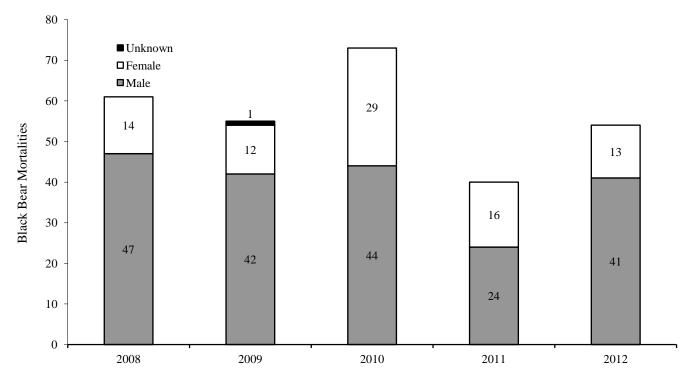


Figure 40. Number of black bear mortalities of all causes in Wind River BMU by sex, 2008-12.

**Table 9.** Harvest criteria for Wind River BMU legal black bear harvest. Criteria are presented by objective as percent adult male in the total harvest, percent female in the total harvest, and percent adult female in the female harvest. Data represent 3-year running average values of current year and previous 2 years.

		Harvest Criteria	Harvest Criteria						
Year	Objective	% Adult <sup>a</sup> Males in Total Harvest	% Females in Total Harvest	% Adult <sup>a</sup> Females in Female Harvest					
	Population Reduction	< 25%	> 40%	> 55%					
	Stable Population	25 – 35%	30 – 40%	45 – 55%					
	Population Increase	> 35%	< 30%	< 45%					
2008		14.9	31.6	24.5					
2009		29.0	28.3	29.1					
2010		37.4	27.0	37.9					
2011		38.1	33.2	55.2					
2012		34.1	35.8	54.3					

<sup>&</sup>lt;sup>a</sup> Adults classified as males and females  $\geq 5$  years of age based on tooth cementum annuli.

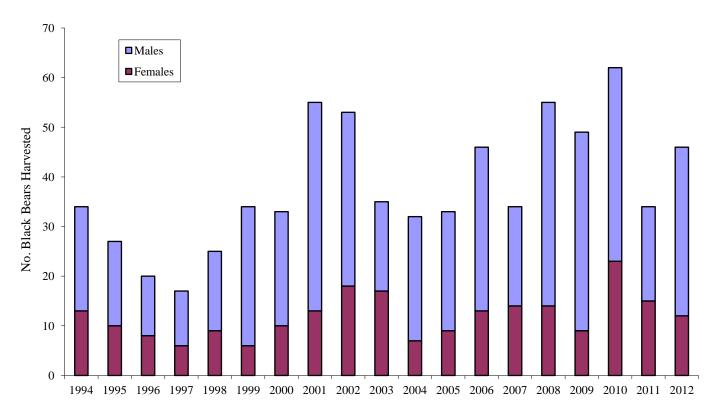


Figure 41. Legal harvest of black bears in Wind River BMU, 1994-2012.

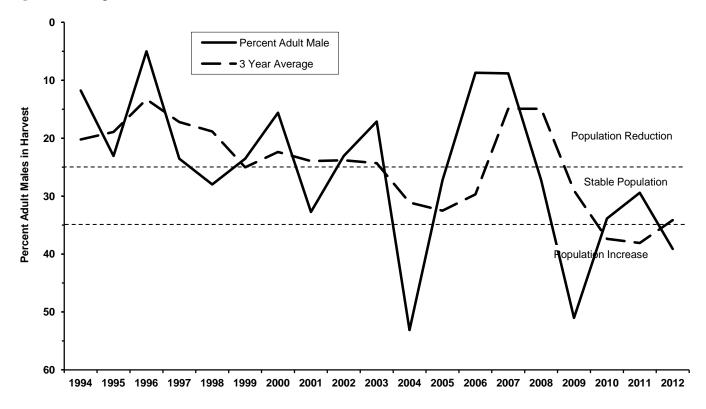


Figure 42. Percent adult males in the total legal black bear harvest in Wind River BMU, 1994-2012.

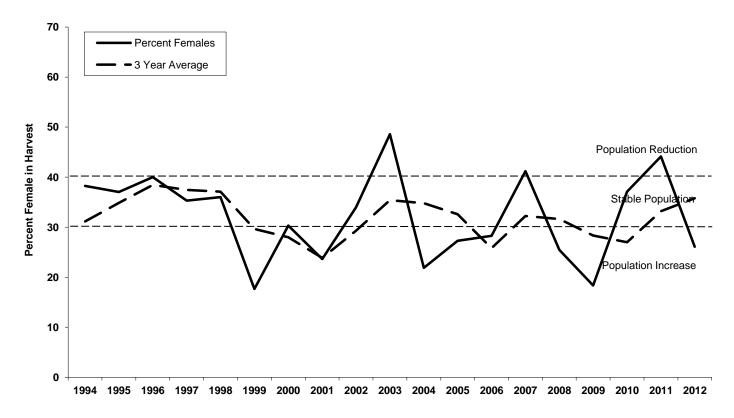


Figure 43. Percent females of the total legal black bear harvest in Wind River BMU, 1994-2012.

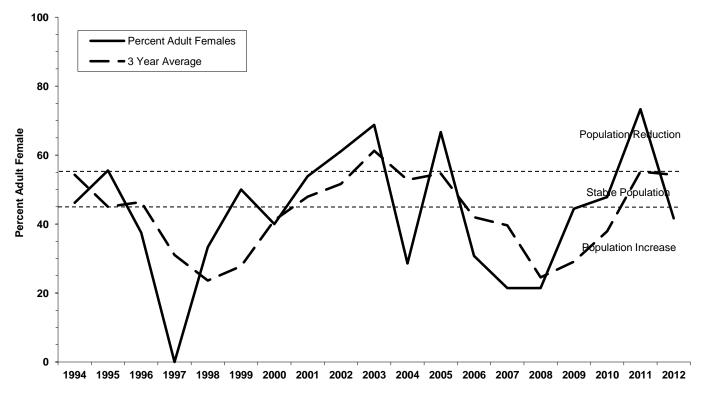


Figure 44. Percent adult females of the total female legal harvest in Wind River BMU, 1994-2012.

#### STATEWIDE HUNT AREA 35

During the 2011 season-setting process, a new hunt area was created to include all areas of Wyoming that previously did not fall within any hunt area or BMU boundaries. These areas are not considered quality black bear habitat and they contain few animals. However, black bears, especially subadult males dispersing from higher quality habitats, may move through and occasionally take up residence in some of the smaller, more isolated mountain ranges and riparian habitats of the state. Area 35 was created to provide hunting opportunity for bears occupying these ranges. The area has no harvest limit and a season running from April 15 to June 15 in spring and August 1 to October 31 in fall (Appendix I). In September 2012, 1 subadult male was harvested in area 35. This bear was harvested in the Black Hills of north-eastern Wyoming.

**Appendix I.** Wyoming black bear hunting season dates and seasonal female harvest limits by BMU and hunt area, 2012.

Normal	Black Bear Management	Hunt Areas	Season Dates	Female Mortality		
Bighorns (301)	9		Archery	General	•	
Sept.1-Oct. 31   4 Fall		1.2	May 1-14	May 15-June 15	8 Spring	
Sept. 1-Oct. 31   4 Fall     Sept. 1-Oct. 31   4 Fall     Sept. 1-Oct. 31   2 Spring     Aug. 15-Nov. 15   2 Fall     April 15-May 31   3 Spring     Sept. 1-Oct. 31   3 Fall     April 15-May 31   3 Spring     Sept. 1-Oct. 31   3 Fall     April 15-May 31   3 Spring     Sept. 1-Oct 31   3 Fall     Snowy Range (502)   8   April 15-30   May 1-June 7   4 Spring     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring     Spring   Sept. 15-30   May 1-June 15   8 Spring     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring     Spring   Sept. 15-30   May 1-June 15   8 Spring		1-2		Sept.1-Oct. 31	4 Fall	
Sept. 1-Oct. 31   4 Fall     May 1-June 15   2 Spring     Aug. 15-Nov. 15   2 Fall     April 15-May 31   3 Spring     Sept. 1-Oct. 31   3 Fall     April 15-May 31   3 Spring     Sept. 1-Oct 31   3 Fall     April 15-May 31   3 Spring     Sept. 1-Oct 31   3 Fall     April 15-30   May 1-June 7   4 Spring     Sept. 15-30   Oct. 1-31   3 Fall     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring     Sept. 1-Oct. 31   3 Fall     April 15-30   May 1-June 15   8 Spring     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring     Sept. 1-Oct. 31   3 Fall     April 15-30   May 1-June 15   8 Spring     Sept. 1-Oct. 31   3 Spring     Sept. 1-Oct. 31	Pighorms (201)	3-4	May 1-14	May 1-June 15	6 Spring	
Laramie Peak (501)   7     Aug. 15-Nov. 15   2 Fall     April 15-May 31   3 Spring   3 Fall     April 15-May 31   3 Spring   3 Spring   3 Sept. 1-Oct. 31   3 Fall     Snowy Range (502)   8     April 15-30   May 1-June 7   4 Spring   3 Fall     Sierra Madres (401)   9     April 15-30   May 1-June 15   8 Spring   8 Spring     April 15-30   May 1-June 15     Apri	Dignorns (301)			Sept. 1-Oct. 31	4 Fall	
Aug. 15-Nov. 15   2 Fall     April 15-May 31   3 Spring   3 Fall     April 15-May 31   3 Fall     April 15-May 31   3 Spring   3 Fall     April 15-May 31   3 Spring   3 Fall     Snowy Range (502)   8   April 15-30   May 1-June 7   4 Spring   3 Fall     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring		5-6			2 Spring	
Laramie Peak (501)   Sept. 1-Oct. 31   3 Fall     April 15-May 31   3 Spring   3 Fall     Snowy Range (502)   8   April 15-30   May 1-June 7   4 Spring   3 Fall     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring				Aug. 15-Nov. 15	2 Fall	
Sept. 1-Oct. 31   3 Fall		7		April 15-May 31	3 Spring	
33   April 15-May 31   3 Spring   3 Fall     Snowy Range (502)   8   April 15-30   May 1-June 7   4 Spring   3 Fall     Sierra Madres (401)   9   April 15-30   May 1-June 15   8 Spring	Laramie Peak (501)			1 -		
Sept 1-Oct 31   3 Fall	Laramic 1 car (301)	33				
Showy Range (502)   8   Sept. 15-30   Oct. 1-31   3 Fall     Sierra Madres (401)   9   April 15-30   May 1-June15   8 Spring				*		
Sept. 15-30 Oct. 1-31 3 Fall  Sierra Madres (401) 9 April 15-30 May 1-June15 8 Spring	Snowy Range (502)	8				
Sierra Manrec (401)	210 Ny 11111go (0 02)		_			
	Sierra Madres (401)	9	1	1		
Sept. 1-30 Oct. 1-31 6 Fall	, ,		-			
Uinta (402)  April 15-30   May 1-June 15   2 Spring   2	Uinta (402)	10			1 0	
Sept. 1-30 Oct. 1-31 2 Fall						
April 15-30   May 1-June 15   5 Spring   Spring   5 Fell   5 Fell		11			1 0	
Greys River (102)    Aug. 15-31   Sept. 1- Oct. 31   5 Fall	Greys River (102)	14 15 16	•			
14, 13, 16 April 13-36 May 1-3 the 13 22 Spring 17, 30 Aug. 15-31 Sept. 1-Oct 31 14 Fall		, ,				
April 15-30 May 1-June 15 4 Spring		17, 50	_	-		
Aug. 1-31 valid only in			71pm 13 30		4 Spring	
that portion of Hunt Area		13				
Wilderness 4 Fall					4 Fall	
Aug. 15-31 Sept 1-Oct. 31						
Wind River (601)   April 15-30   May 1-June 15   10 Spring	Wind River (601)	19	-	I =		
Aug. 15-31 Sept. 1-Nov. 15 8 Fall				-		
April 15-30   May 1-June 15   4 Spring		28				
Aug. 1-14 Aug. 15-Oct. 31 4 Fall						
April 15-30   May 1-June 15   2 Spring		31				
Aug. 1-14 Aug. 15-Oct. 31 2 Fall  18, 20, 21 April 15-30 May 1-June 15 13 Spring		18 20 21		Ţ.		
Jackson (101)       18, 20, 21   April 15-30   May 1-June 15   22, 24, 29   Aug. 15-31   Sept. 1-Oct. 31   20 Fall       13 Spring 20 Fall	Jackson (101)	, ,				
April 15-30 May 1-June 15 g g.,*				•		
23 1 1 1 1 1 5 21 0 5 1 1 8		23	_	_		
April 15-30 May 1-June 15 *		25, 26, 27			*	
Absaroka (201) 25, 26, 27 April 13-30 Nday 1-3 the 13 Inclusive to areas 23, 25, 26, and 27	Absaroka (201)		-			
April 15-30 May 1 – June 15		32		-		
32 Aug. 1 – Oct. 31 Unlimited			r = == == ==		Unlimited	
Statewide (999) April 15-June 15	Statewide (999)	25			TT-1::4. 1	
35 August 1-Oct. 31 Unlimited		35		-	Unlimited	

**Appendix II.** Black bear season closure dates for spring and fall seasons, 2010-12. Highlighted cells indicate season closure due to the harvest limit reached prior to the closing date of the season in the regulations.

MGMT UNIT	AREA	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012
BIGHORNS	1, 2	6/9/2010	9/3/2010	6/15/2011	9/6/2011	6/15/2012	9/5/2012
	3, 4	5/31/2010	9/5/2010	6/6/2011	9/29/2011	6/15/2012	10/31/2012
	5, 6	6/15/2010	11/15/10	6/15/2010	11/15/2011	6/15/2012	11/15/2012
LARAMIE PEAK	7	5/31/2010	10/31/2010	5/31/2011	10/31/2011	5/19/12	9/3/2012
	33	5/31/2010	9/13/2010	5/31/2011	10/31/2011	5/31/12	10/31/2012
SNOWY RANGE	8	5/27/2010	10/11/2010	6/7/2011	10/31/2011	5/21/12	10/5/2012
SIERRA MADRES	9	5/26/2010	9/10/2010	6/15/2011	10/31/2011	6/4/12	9/14/2012
UINTA	10	6/10/2010	10/31/2010	6/15/2011	10/31/2011	6/15/12	10/31/2012
GREYS RIVER	11	6/15/2010	10/7/2010	6/15/2011	10/31/2011	6/8/12	10/31/2012
	14, 15, 16, 17 & 30	6/15/2010	9/20/2010	6/15/2011	10/31/2011	6/4/12	9/25/2012
WIND RIVER	13	6/12/2010	9/3/2010	6/15/2011	9/24/2011	6/15/12	10/31/2012
	19	6/7/2010	9/13/2010	6/15/2011	11/15/2011	6/15/12	11/15/2012
	28	6/15/2010	10/13/2010	6/15/2011	10/31/2011	6/15/12	10/31/2012
	31	6/15/2010	10/31/2010	6/15/2011	10/31/2011	6/15/12	10/31/2012
JACKSON	18, 20, 21, 22, 24 & 29	6/15/2010	9/28/2010	6/15/2011	10/31/2011	6/15/12	10/31/2012
ABSAROKA	23	6/15/2010	10/31/2010	6/15/2011	10/31/2011	6/15/12	10/31/2012
	25, 26 & 27	6/15/2010	10/31/2010	6/15/2011	10/31/2011	6/15/12	10/31/2012
	32	6/15/2010	10/31/2010	*	*	*	*
* Indicates a hunt	35	NA	NA	*	*	*	*

<sup>\*</sup> Indicates a hunt area with unlimited harvest

NA indicates hunt area 35 was not created until 2011